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Technology on Reducing Post Harvest Losses and Maintaining Quality of Fruits and Vegetables in Kenya

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Introduction

Horticultural sub-sector is the fastest growing industry in the agricultural sector in Kenya. It employs directly and indirectly about 4 million people. Small scale holder farmers contribute over 60% of the total production. The sub-sector generates over US$ 300 Million in foreign exchange earnings. Total horticultural production is close to 3 million tones, making Kenya one of the major producers and exporters of horticultural products in the world. The emerging issues such as maximum residue levels (MRLs) and social environmental accountability in the dynamic fresh produce markets and increased drought incidences makes it necessary for the industry to reposition itself so as to provide relevant, adequate, globally oriented products that are competitive and meet customer requirements.

Current Status of Fruits and Vegetables Practices

Crop loss through pests/diseases

1. Pests and diseases management has been a major challenge especially for small scale farmers.
2. Apart from being expensive, chemical control is not always effective against some of the major pests, including scales and mites and diseases such as anthracnose.
3. It has been estimated that approximately 35% of all crop is lost through attack by pests and diseases.

Post- harvest handling

1. Losses are common with agricultural produce marketing, even if nothing is actually thrown away.
2. Post harvest losses account for approximately 10% of the total horticulture produce. Poor harvesting techniques and poor on-farm handling (bruises, exposure to sun) damage the produce before they are sold to consumer.
3. Post harvest handling is as important as growing for delivering an attractive product to the consumer.

4. Harvesting of most fruits and vegetables is mainly done by hand before packaging. Fresh tomatoes for instance, are highly perishable, and unless proper post harvest handling procedures are followed, their quality declines rapidly due to bruises.

Lack of trainings/enforcement of regulations

The EU directives on traceability are currently of concern to Kenyan farmers and exporters of fresh produce to Europe. The regulations covers all food produced for consumption in the EU, both locally and imported. This poses major challenges, both financial and technical, to comply by many small scale farmers, hence leading to crop losses.

Tranportation

1. Poor off farm handling of fruits and vegetables causes considerable loss to produce. Delays in delivery of horticultural products to markets destinations have monumental costs in some products such as tomatoes-caused mainly by poor infrastructure (bad roads)and inefficient organizations.
2. Reliability of air connections is as critical as its costs.

Preservation /cold storage facilities

1. Cooling and storage facilities not available in most rural areas and even where they are available, farmers not adequately utilizing the facilities adequately owing to high storage costs/charges.
2. Facilities mainly utilized by large scale farmers and exporters.
3. Some horticultural crops such as tomatoes require forced air cooling to avoid excessive water loss, and provide high humidity cooling air.
4. Mechanical refrigeration also provides efficient systems for preservation of harvested products.
5. However, most rural areas where horticulture production is practiced have no electrical power, hence farmers not able to use these technologies.

Lack of organised markets/contract farming

Smallholder farmer are currently not well organized into production and marketing groups to take advantage of contract farming, thereby improving producer –buyer linkages and thereby reduce losses

Local utilization to products

1. The **Ministry** of Agric, promotes local utilization and consumption of horticultural products.
2. Utilization targets reduction of surplus production and or market rejects, and minimizes wastes.
3. This strategy reduces over-reliance on export market and encourages local consumption and value addition of horticultural products.

Processing/value addition

1. Processing is a common way of adding value to products.
2. Unfortunately, as farming becomes more commercial, such processing tends to be more in control of commercial firms, making it more difficult for small scale farmers to do such value addition for themselves.
3. A number of processors of horticultural crops are in operation in Kenya: - **Sunny Processors** in central Kenya and **Premier Foods** in the coast have established plants for Passion fruit processing.

Valley Orchard has a processing plant for passion, and **Del Monte** processing plant for pineapple and mangoes.

1. These investments in production and processing have the potential to make Kenya a market leader in tropical fruit juice.
2. Most small scale farmers, however do not benefit from the presence of the above processing plants because of low production volumes, and low quality.
3. Hence most of their raw materials are imported from Egypt and South Africa.

Technical and advisory services

1. Educating and continuous training horticultural growers on production, record keeping, harvesting and post harvest handling, especially for small holders being done.
2. Improving productivity through demonstrations on new technologies and introducing new crop varieties